

STUDIES IN BIGNONIACEAE 31:
NEW SPECIES AND COMBINATIONS FROM AMAZONIAN
PERU AND BRAZIL¹

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ABSTRACT

Recent collections of Bignoniaceae from Amazonian Peru and Brazil include six undescribed species—*Adenocalymma prancei* A. Gentry, *Arrabidaea revillae* A. Gentry, *Distictella reticulata* A. Gentry, *Jacaranda bullata* A. Gentry, *Memora racemosa* A. Gentry, and *Tabebuia incana* A. Gentry. A new combination for another species of Amazonian Bignoniaceae—*Manaosella cordifolia* (DC.) A. Gentry—is also proposed.

***Adenocalymma prancei* A. Gentry, sp. nov.**

Frutex scandens, ramulis teretibus, glabrescentibus. Folia 2-foliolata, foliolis anguste ellipticis plus minusve glabrescentibus. Inflorescentia racemosa, axillaris, puberula; calyx cupulatus, 5-denticulatus, puberulus; corolla aurea, tubulo-campanulata, extus puberula; ovarium cylindricum, glabrum. Capsula lineari-oblonga, minute puberula.

Liana; branchlets terete, when young minutely puberulous with simple and forked whitish trichomes, glabrescent, the nodes without interpetiolar glandular fields; pseudostipules thick-foliaceous, linear-oblong, 5–13 mm long. Leaves 2-foliolate, sometimes with a simple tendril; leaflets elliptic or narrowly elliptic to lanceolate-elliptic, rounded to cuneate at the base, 10–21 cm long, 3–10 cm wide, subcoriaceous, the veins and veinlets prominulous below, glabrous or glabrescent above, more or less glabrescent below, when young with scattered minute simple and forked trichomes, especially along the main veins, drying olive; petiolule 1–3 cm long; petiole 1–2.5 cm long, glabrate or minutely puberulous with simple and forked trichomes. Inflorescence an axillary raceme, puberulous with simple and forked trichomes; bracts small, 2–3 mm long, ovate, densely puberulous, early caducous; bracteoles small, ca. 2 mm long, ovate, early caducous. Flowers with the calyx cupular, shallowly 5-dentate or 5-denticulate (sometimes spathaceously split) (7–)8–10 mm long, 6–7 mm wide, puberulous, with raised glands near the margin; corolla yellow, tubular-campanulate above a somewhat narrowed base, 4.5–7 cm long, ca. 1 cm wide at the mouth of the tube, the tube 3.5–5 cm long, the lobes 1–1.8 cm long, puberulous outside with simple and stellate trichomes, the lobes inside glandular-lepidote and slightly scattered puberulous, the tube glabrous inside except at and below the base of the stamens; stamens didynamous, inserted 12–13 mm above the base of the tube, the anther thecae divaricate, 3 mm long, the filaments 1.5–2.5 cm long; pistil 3.5–5 cm long, the ovary linear-cylindric, 3 mm long, 1 mm wide, glabrous; disc patelliform 0.5 mm long, 2 mm wide. Capsule (immature) com-

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pressed, linear-oblong, 9 cm long, to 1.2 cm wide, minutely whitish puberulous with simple trichomes, also with scattered dark-drying glands.

TYPE: BRAZIL. AMAZONAS: 3–6 km N of Manaus-Itacoatiara Road near Rio Preto da Eva (Km 79), vine, flowers yellow, 3 Dec. 1974, *Gentry & Ramos 13063* (INPA, holotype; MO, MG, NY, isotypes).

Additional collections examined: BRAZIL. AMAZONAS: Estrado do Aleixo near Manaus, 6–7 km past INPA, sterile vine, 2 Dec. 1974, *Gentry 13037* (INPA, MO). 2–5 km N of Manaus-Itacoatiara Road at Km 79 near Rio Preto da Eva, 100–200 m, sterile vine, 24 Nov. 1974, *Gentry 12830* (INPA, MO). Ducke Forest Reserve, Km 26 on the Manaus-Itacoatiara Road, sterile vine, 23 Nov. 1974, *Gentry 12818* (INPA, MO). INPA Campus, Manaus, sterile vine, 30 Nov. 1974, *Gentry 13015* (INPA, MO). Rio Cuieras, 2 km below mouth of Rio Brancinho, liana, corolla yellow, 11 Sep. 1973, *Prance et al. 17778* (INPA, MO, NY). Rio Purus, Rio Ituxi, Lago Preto, 2 km N of Lábrea, 5 cm wide, flowers lemon yellow, 26 June 1971, *Prance et al. 13758* (NY).

FRENCH GUIANA: Fleuve Maroni entre Kaiapou et Papaichton, liane ripicole, pétalos jaunes, fruits verts, 28 Apr. 1975, *Sastre et al. 4011* (MO).

PERU. HUANUCO: Tingo Maria, 780–900 m, sterile vine, leaves whitish beneath, 28 Mar. 1977, *Gentry & Daly 18783* (MO).

I have previously considered this a glabrescent-leaved variant of *A. subincanum* Hub. However, discovery of fruiting specimens of both species makes lumping untenable—*A. subincanum* has short, thick, densely tannish-dendroid-pubescent fruits and thick wingless seeds. The calyx of *A. prancei* is also longer than that of *A. subincanum* [(7–)8–9(–10) mm versus 5–6 mm] and it has simple and forked, rather than stellate, vegetative trichomes and is often completely glabrescent. The ranges of the two species are apparently distinct as well, with *A. prancei* in central and upper Amazonia (north to French Guiana) and *A. subincanum* in lower Amazonia from Itacoatiara to the Rio Jarí and southeast to northern Maranhão State.

Another close relative of *A. prancei* is *A. apparicianum* J. C. Gom. of Ceará, Brazil, which has a longer calyx (12–15 mm), wider fruit (2–2.5 cm), and leaflets smaller and noticeably simple-puberulous beneath.

It is possible that the Rio Purus collection, which consists of only three buds and four leaflets, is not this species. Its leaflets are larger (20–25 by 10–12 cm) and more coriaceous and bullate than described above for *A. prancei*.

***Arrabidaea revillae* A. Gentry, sp. nov.—FIG. 1.**

Frutex scandens, ramulis teretibus, glabris. Folia 2–3-foliolata, foliolis ovatis vel ovato-ellipticis, subtus nervorum lateralium in axillibus barbatis. Inflorescentia axillaris, plerumque racemosa, pauciflora, lepidota et sparsim puberula; calyx tubulosus, bilabiatus vel calyptratus et truncatus, sparsim lepidotus puberulusque; corolla rosea, tubulo-infundibuliformis, extus puberula; ovarium oblongum, dense lepidotum. Capsula lineari-oblonga, complanata, sparsim lepidota, seminibus sin alis.

Liana; branchlets terete with widely spaced pale raised lenticels, glabrous, longitudinally striate, without interpetiolar glandular fields; pseudostipules not evident. Leaves 3-foliolate or 2-foliolate with a simple tendril or tendril scar; leaflets ovate to ovate-elliptic, rounded at the base, acute to very shortly acuminate at the apex, 7–15 cm long, 4–8.5 cm wide, chartaceous, above minutely puberulous along the midvein, otherwise glabrous, below conspicuously barbate in the axils of the lateral nerves, otherwise glabrous except for scattered minute

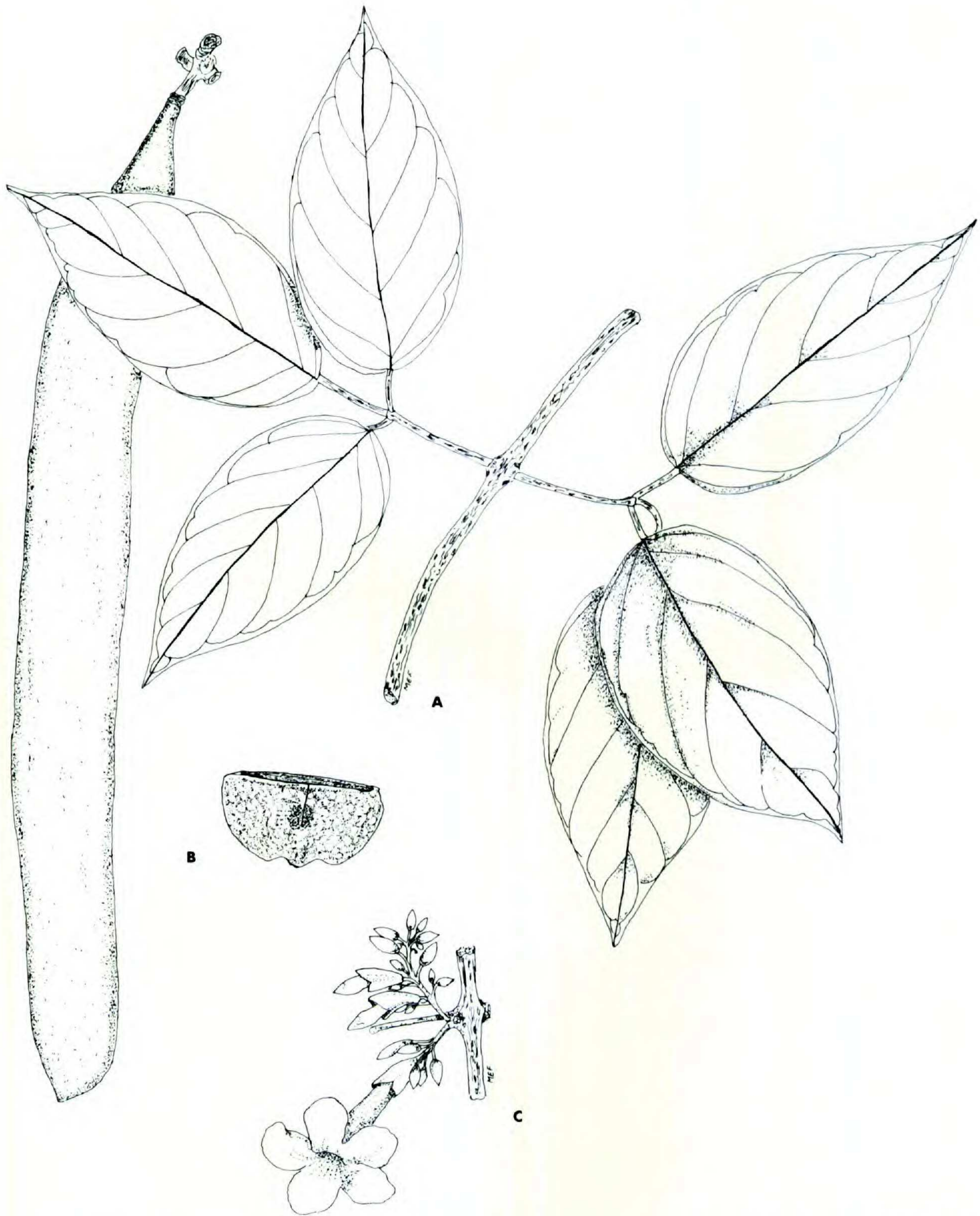


FIGURE 1. *Arrabidaea revillae* A. Gentry.—A. Leaves ($\times\frac{1}{2}$). [After *Revilla* 737 (MO)].—B. Fruit and seed ($\times\frac{1}{2}$). [After *Rimachi* 787 (MO)].—C. Inflorescence ($\times\frac{1}{2}$). [After *Revilla* 737 (MO)].

reddish lepidote scales; petiolules 1–3.5 cm long; petiole 2.5–7 cm long, minutely puberulous and scattered reddish lepidote. Inflorescence axillary, more or less paniculate but usually strongly contracted and more or less racemose, lepidote and sparsely puberulous, drying blackish; bracts and bracteoles linear, to 2 mm long; buds narrow and pointed. Flowers with the calyx tubular, irreg-

ularly bilabiate or calypterate and subtruncate, 10–14 mm long, 5–8 mm wide, very sparsely puberulous and lepidote, drying blackish; corolla magenta, tubular-infundibuliform, 3.5–6 cm long, 0.6–1 cm wide at the mouth of the tube, the tube 3–4 cm long, the lobes 0.6–1.5 cm long, puberulous outside and on the lobes inside villous at the level of stamen insertion; stamens didynamous, inserted 10–12 mm from the base of the tube, the filaments 1.2–1.7 cm long, the anther thecae divaricate, 2 mm long, the connective slightly extended; pistil 2.8–3.2 cm long, the ovary oblong, somewhat flattened, densely lepidote, 2 mm long, 1 mm wide; disc annular-pulvinate, 1.5 mm long, 3 mm wide. Capsule linear-oblong, compressed, 20–27 cm long, 2.5–2.8 cm wide, the midrib not evident, drying blackish, scattered lepidote, the surface not gland-pitted; seeds 2.4–2.5 cm long, 3.6–3.9 cm wide, slightly thickened and corky, wingless.

TYPE: PERU. LORETO: Provincia Maynas, Distrito Pebas, Río Yahuaryacu, afluyente del Río Ampiyacu, bejuco de la ribera, flores blancas y lilas, 18 June 1976, *Revilla* 718 (MO, holotype; COL, F, NY, UNAP (Iquitos), USM, isotypes).

Additional collections examined: PERU. LORETO: Provincia Maynas, Quebrada de Uchpa Cano across the Río Itaya from Iquitos, fruits green, 25 Jan. 1974, *Rimachi* 787 (MO). Río Amazonas, S of Iquitos, flowers reddish violet, 18 Aug. 1972, *Croat* 19355 (MO). Isla de Ushpa-Cano near the mouth of the Río Itaya, flowers orchid, fruits green, 24 Aug. 1972, *Croat* 19657 (MO). Mishayacu near Iquitos, 100 m, liana, flowers dark violet, Apr. 1930, *Klug* 1228 (US). Distrito Pebas, Río Yahuaryacu, afluyente del Río Ampiyacu, flores lilas, 18 June 1976, *Revilla* 737 (F, MO, NY, INPA, UNAP (Iquitos), USM).

BRAZIL. AMAZONAS: Parana do Xiboremo, near Manaus, May 1953, *Fróes* 29623 (IAN).

This species is closely related to the widespread and variable *A. corallina* (Jacq.) Sandw. which is apparently absent in upper Amazonia. The most striking difference between *A. revillae* and *A. corallina* is the former's wingless, presumably water-dispersed seeds. The fruit of *A. revillae* is also wider than that of *A. corallina* (which is less than 2.3 cm wide), dries black rather than tan or brownish, and does not have a glandular-pitted surface. The corolla is narrower than in *A. corallina* and tubular-infundibuliform rather than tubular-campanulate. Other differences from *A. corallina* include a usually much more contracted inflorescence, narrowly pointed buds, longer calyx (when not calypterate), and the characteristic grayish color of the dried leaves.

***Distictella reticulata* A. Gentry, sp. nov.**

Frutex scandens, ramulis teretibus, villosa-tomentosa. Folia 2–3-foliolata, foliolis ellipticis vel ovatis, nervatura supra impressa, subtus prominenti valde reticulata areolis puberulis. Inflorescentia racemosa, terminalis, puberula; calyx cupulatus, truncatus, puberulus; corolla alba, extus dense puberula; ovarium oblongum, puberulum. Capsula elliptica, villosa-tomentosa.

Liana; brachlets terete, villous-tomentose, the nodes without interpetiolar glandular fields or pseudostipules. Leaves 2–3-foliolate, sometimes with a trifid tendril; leaflets elliptic to ovate, obtuse to rounded at the apex, rounded at the base, 5–11 cm long, 3–8 cm wide, coriaceous, all veins and veinlets more or less impressed above and strongly raised beneath, the lower surface thus intricately reticulate, glabrous or glabrescent above except for occasional trichomes at the base of the midvein, below pilose-tomentose, especially within the areoles, drying brownish olive above and below; petiolules 0.5–1 cm long; petiole 1–1.3 cm

long, tomentose. Inflorescence a terminal raceme or racemiform with the lower pedicels converted into 2- or 3-flowered peduncles, brownish tomentose; bracts and bracteoles caducous. Flowers with the calyx cupular, circumscissile at the base in fruit, truncate, 10–14 mm long, 10–12 mm wide, densely appressed-puberulous with tannish simple trichomes, with or without plate-shaped glands; corolla white, thickish, tubular-campanulate above a narrowed base, strongly bent above the base, 4.5–6.5 cm long, 1.5–2.5 cm wide at the mouth of the tube, the tube 3–4.5 cm long, the lobes 1.5–2 cm long, densely puberulous outside, the lobes glandular-lepidote inside, slightly glandular villous at the level of stamen insertion; stamens didynamous, inserted ca. 12 mm above the base of the tube, the anther thecae divaricate, ca. 4 mm long; ovary oblong, 4-grooved, 4 mm long, 2 mm wide, densely appressed puberulous; disc conical, 2 mm long, 4 mm wide. Capsule elliptic, somewhat compressed, the valves thick and woody, the midrib not visible, 6 cm long, 2.8 cm wide, softly villous-tomentose with erect reddish brown trichomes; seeds thin, rather asymmetrically bialate, ca. 1.5 cm long and 3.5 cm wide, the wings brown, membranous, not distinctly demarcated from the seed body.

TYPE: BRAZIL. AMAZONAS: Manaus, Igarapé de Cachoeira Alta do Tarumã, terreno arenoso, capoeira, trepadeira com gavinhas, frutos ainda verdes, 28 Aug. 1962, *Rodrigues & Chagas 4610* (INPA, holotype; MO, isotype).

Additional collections examined: BRAZIL. AMAZONAS: Manaus, Flores, igapó do riacho, cipó, fl. branca, 30 June 1941, *Ducke s.n.* (RB-53243) (RB). Manaus, margem do igarapé da cachoeira Alta, estrada da Forquilha, 24 Aug. 1955, *Chagas 1705* (K). Manaus, margem do igarapé do Parque 10, 27 July 1956, *Chagas 3994* (K). Manaus, margem do igarapé da cachoeira Alta do Tarumã, flores alvas, 6 July 1955, *Chagas 1330* (K), 30 May 1955, *Chagas 1086* (K). Manaus, flores alvas, estames róseas, 25 June 1956, *Francisco & Dionisio 3940* (K).

The leaflets of this species are very like the simple leaves of *D. monophylla* Sandw. of the Guayana region in their strikingly sculptured reticulum but are otherwise unique in the genus. Besides having subsessile simple leaves, *D. monophylla* is a subshrub with few-flowered inflorescences, smaller calyces, and gland-dotted fruits. Among viny species, *D. reticulata* may be compared with *D. dasytricha* Sandw. of southcentral and southwestern Brazil, which has a much longer shaggy indumentum, and *D. obovata* Sandw. of the Guayana highlands, which has smaller, differently shaped leaves, smaller calyces, and warty-lenticellate fruits.

Jacaranda bullata A. Gentry, sp. nov.—FIG. 2.

Folia pinnatim composita, 11–17-foliolata, foliolis acutis, subsessilibus, 2–7 cm longis, 0.6–2.3 cm latis. Inflorescentia anguste paniculata, fere racemosa; calyx campanulatus, minute 5-denticulatus; corolla anguste tubulo-campanulata, extus puberula; antherae 2-theatae; ovarium glabrum. Fructus ellipticus, complanatus, seminibus alatis.

Branchlets subtetragonal, without noticeable lenticels. Leaves simply pinnate with 11–17 leaflets; leaflets asymmetrically elliptic or rhombic-elliptic, acutish at the apex, obtuse at the base, subsessile, membranous, 2–7 cm long, 0.6–2.3 cm wide, entire to remotely serrate, glabrous above, puberulous with short curved trichomes along the margin and the veins beneath, more or less bullate



FIGURE 2. *Jacaranda bullata* A. Gentry.—A. Habit ($\times\frac{3}{5}$).—B. Flower ($\times\frac{3}{5}$). [After Froes & Addison 29141 (IAN)].

with all the veins impressed above and raised beneath. Inflorescence terminal, very narrowly paniculate, almost racemose, the lateral branches 2–3-flowered and mostly less than 1 cm long, puberulous. Flowers with the calyx campanulate, essentially truncate, minutely and evenly 5-denticulate, 5 mm long, 4 mm wide, sparsely lepidote, otherwise glabrous or with a few minute trichomes near the

margin; corolla pink ("rosea"), narrowly tubular-campanulate, 4 cm long, 0.8 cm wide at the mouth of the tube, the tube 3.5 cm long, the lobes 0.5 cm long, minutely stalked glandular-lepidote outside, conspicuously so in bud, very inconspicuously so at anthesis, the lobes puberulous outside and inside, especially toward the tips; stamens didynamous, the anther thecae divaricate, 2.5 mm long, the staminode ca. 2.8 cm long, capitate, glandular-villous for the middle 5 cm and the apical 6 cm, otherwise glandular-lepidote; ovary ovate, ca. 1.3 mm long and wide, glabrous; disk patelliform, ca. 0.5 mm long and 2.5 mm wide. Capsule elliptic, strongly compressed, subacute at the base and the apex, 3.7–5 cm long, 2.3–3 cm wide, glabrous except for a few scattered lepidote scales; seeds 0.7–1 cm long, 1.4–1.7 cm wide, the brown seed body almost surrounded by the thin brownish-hyaline wings.

TYPE: BRAZIL. AMAZONAS: Margem do Rio Aracá (Rio Negro drainage north of Barcelos), terra firme, alta, 29 Oct. 1952, *Fróes & Addison 29141* (IAN, holotype; K (2 sheets), US, MO fragment, isotypes).

Sandwith recognized this as a probable new species according to a note on the Kew material but refrained from describing it since the Kew duplicate had only a single shriveled corolla. The IAN duplicate selected as the holotype includes a single well-pressed corolla—the basis of the above floral description—which makes the description of this distinctive species possible. Its closest relative is probably the rarely collected *J. heteroptila* Bureau & K. Schum. of northeastern Brazil, which sometimes has once-pinnate leaves but fewer—not all bullate—leaflets, an openly paniculate—almost glabrous—inflorescence, bilabiate calyx, and larger (7 by 4.2 cm), more oblong fruit. A relationship with *Jacaranda egléri* Sandw. of the Rio Tapajos region might also be suggested, but that species differs especially in its much smaller, more coriaceous, nonbullate leaflets and also in a slender, few-flowered, glabrescent inflorescence, campanulate, 5-dentate calyx, smaller corolla with a long basal constriction, and smaller capsule.

Memora racemosa A. Gentry, sp. nov.

Frutex scandens, ramulis teretibus, glabris. Folia 2-foliolata vel pinnatim 5–7-foliolata, foliolis ovatis, subtus minute puberulis. Inflorescentia racemosa elongata, axillaris, minute lepidota, bractis bracteolisque parvulis, caducis; calyx campanulatus, minute 5-denticulatus; corolla flava, tubulo-infundibuliformis, extus glabra; ovarium lineare, minute lepidotum. Capsula linearis, valde complanata, aliquantum lepidota.

Liana; branchlets terete, glabrous, drying dark with numerous minute roundish lenticels, the nodes without interpetiolar glandular fields; pseudostipules small, blunt, subwoody, ca. 2 mm long. Leaves 2-foliolate (mostly) to simply pinnate with up to 7 leaflets, 2-foliolate leaves often with a simple tendril; leaflets ovate to elliptic-ovate, obtuse to acuminate, rounded to cuneate at the base, subcoriaceous, 7–14 cm long, 3–6 cm wide, minutely appressed puberulous and papillose-puberulous below, glabrous above except for a few minute trichomes at the base of the midvein; petiolules and petiole inconspicuously and minutely scattered-puberulous dorsally. Inflorescence an elongate axillary raceme, often several per node, rarely branched near the base with each branch racemose, drying dark, minutely lepidote; pedicels 8–16 mm long; bracts linear, 4–5 mm

long, 1 mm wide, caducous; bracteoles sublinear, ca. 4 mm long and 1 mm wide, usually near the middle of the pedicel. Flowers with the calyx campanulate, coriaceous, truncate, minutely 5-denticulate, 6–10 mm long, 6–9 mm wide, drying black, glandular, scattered-lepidote, otherwise glabrous or puberulous with a few appressed trichomes mostly near the apex; corolla yellow, tubular-infundibuliform, 4.5–6.5 cm long, 0.9–1.6 cm wide at the mouth of the tube, the tube 3.5–5 cm long, the lobes 1–1.5 cm long, glabrous outside and inside except for glandular trichomes at the level of stamen insertion; stamens didynamous, inserted ca. 10 mm from the base of the tube, the filaments 1.3–2 cm long, the thecae divaricate, 3 mm long; pistil 3–3.5 cm long, the ovary linear, 3–4 mm long, ca. 0.6 mm wide, minutely lepidote; disc patelliform-pulvinate, 1.5–2 mm long, 3 mm wide. Capsule (immature) linear, strongly compressed with slightly thicker margins, 25–40 cm long, to ca. 1.3 cm wide, drying black without a visible midline, reddish-lepidote, otherwise glabrous.

TYPE: BRAZIL. PARA: Km 93, Belém-Brasília Highway, liana on high tree, flowers yellow, frequent on high ground, 5 Aug. 1963. *Maguire et al.* 56008 (MO-2232814, holotype; MO-2279292, COL, NY, isotypes).

Additional collections examined: BRAZIL. PARA: Rio Tocantins, Jacundá, terra firme, mata central, 15 May 1951, *Fróes* 27107 (IAN). Km 249–254, Rodovia Belém-Brasília, cipó sobre árvore, flores amarelas, mata terra firme, beira da estrada, 7 July 1960, *Oliveira* 873 (IAN). Km 289–293, Rodovia Belém-Brasília, 31 July 1960, *Oliveira* 948 (IAN). MARANHÃO: Km 338, Rodovia Belém-Brasília, beira da estrada, 24 Aug. 1960, *Oliveira* 1040 (IAN, 2 sheets).

SURINAM. Lely Mountains, 175 km SSE of Paramaribo, 500–700 m, NW corner of plateau no. 1, woody vine, corolla yellow, young twigs and inflorescence rachises sticky, 13 Oct. 1976, *Mori & Bolten* 8467 (MO), western edge of plateau 2, woody vine, corolla yellow, 16 Oct. 1976, *Mori & Bolten* 8512 (MO).

This species is related to *M. patula* Miers, from which it differs in the more open, elongate inflorescence with smaller bracts and bracteoles, and to *M. biternata* A. Samp., which has branching inflorescences, sessile or subsessile leaflets, and wider bracteoles just below the calyx. Both of these species have broader fruits than *M. racemosa*. *Memora racemosa* is unique in the genus in the minutely appressed puberulous leaf undersides, a feature somewhat reminiscent of *Arrabidaea candicans* (L. Rich.) DC.

***Tabebuia incana* A. Gentry, sp. nov.**

Arbor ad 30 m altam. Folia palmatim 5-foliolata, foliolis ellipticis, integris, infra dense stellato-tomentosis trichomatibus adpressis, argenteis. Inflorescentia paniculata, congesta, ramis dense stellato-rufescentibus. Flores calyce campanulato, stellato-rufescenti; corolla lutea, extus glabra, intus fauce villosa, ovarium oblongum, glabrum. Capsula ignota.

Tree to 30 m; branchlets subtetragonal, the epidermis rather loose, minutely stellate-tomentose when young. Leaves palmately 5-foliolate; leaflets evenly elliptic, acute, rounded or broadly cuneate at the base, 3.5–12 cm long, 1.2–6 cm wide, entire, membranous to chartaceous, above stellate pubescent along the midvein, otherwise scattered lepidote, below densely tomentose with minute sessile or subsessile stellate trichomes, drying brown or blackish above, contrastingly tan or silvery below from the trichomes, the less pubescent veins below

drying darker; petiolules 0.5–2.7 cm long; petiole 3.5–8 cm long, finely stellate-tomentose. Inflorescence a highly contracted subfasciculate panicle; peduncles and pedicels hardly visible, less than 5 mm long, stellate rufescent. Flowers with the calyx campanulate, 5–8 mm long, 5–7 mm wide, densely stellate-rufescent, also with some simple trichomes; corolla yellow, tubular-infundibuliform, 6–7.2 cm long, ca. 1.5 cm wide at the mouth of the tube, the tube 4.8–5.5 cm long, the lobes 1.5–2 cm long, the tube glabrous outside, the lobes lepidote and ciliate, otherwise glabrous, the tube inside glabrous dorsally, densely villous with simple trichomes to 1.5 mm long ventrally, villous at the level of stamen insertion; stamens didynamous, the anther thecae divaricate, 2–3 mm long, the longer filaments 1.6–2 cm long, the shorter filaments 1.2–1.4 cm long, the staminode ca. 2 mm long, inserted 6–7 mm from the base of the corolla tube; pistil 2.4–2.5 cm long, the ovary oblong, 5 mm long, 1.5 mm wide, glabrous, finely longitudinally impressed-striate, the ovules ca. 8-seriate in each locule; disc pulvinate, 0.7 mm long, 2 mm wide. Capsule unknown.

TYPE: BRAZIL. AMAZONAS: Manaus, Reserva Florestal Ducke, inventario florestal (Dr. William), árvore 2205, hectare 05D, fenológico 101, árvore de 30 m de altura por 30 cm de diâmetro, na mata de terra firme em solo argiloso, flores amarelas sem aroma, 29 Oct. 1968, *J. Aluisio* 236 (INPA-23866) (INPA, holotype; MO, isotype).

Additional collections examined: PERU. LORETO: Provincia de Requena, Genaro Herrera, Río Ucuyali below Requena, non-inundated upland forest on sandy soil, tree 30 m, flowers yellow, with red streaking in throat, leaves white beneath, bark smooth and powdery, 9 Dec. 1977, *Gentry et al.* 21314 (MO).

BRAZIL. AMAZONAS: Manaus, Reserva Florestal Ducke, árvore 2205 do levantamento-fenológico 101, árvore de 25 m de altura por 30 cm de diâmetro, mata de terra firme, solo argiloso, 22 June 1966, *Rodrigues & Osmarino* 8139 (INPA-17500), margem da estrada principal, lado direito, árvore de 30 m por 25 cm de diâmetro, de fuste ereto e copa de 5 m de diâmetro, desfolhada, ocasional na mata de terra firme, cálice verde ferrugíneos com lacíneas roxas nas bordas, corolla amarela com listra vermelho-escuras e pelos brancos no tubo corolínico, "pau-darco amarelo," 20 Oct. 1970, *Rodrigues* 8973 (INPA-28359). Estrada Manaus-Itacoatiara, Km 105, margem da estrada, ocasional na mata de terra firme, árvore de 25 m no início da floracão, fuste de 20 cm de diâmetro na base, flores amarelas, 11 Sep. 1965, *Rodrigues & Loreiro* 7117 (INPA-15779, MO). Estrada Manaus-Itacoatiara, Km 104, árvore de 30 m de altura por 33 cm de diâmetro, fuste de 24 m de comprimento, circunferência do fuste na base 106 m, no meio 86 cm e no ápice 56 cm, copa de 6 m de altura por 8 de largura, "pau d'arco," 24 May 1968 (sterile), *Coelho, Lima & Osmarino s.n.* (INPA-21246). PARA: Belterra, árvore, madeira branca na periferia e preta no interior, casca lisa, 29 June 1947, *Black* F1047-969 (IAN). Belterra, virgin upland forest, 570 ft, tree 123 ft tall, 39" diam., wood with odor of horse urine, 3 July 1947, *Yale Project* 134, F-10 (US).

The most distinctive characteristic of this species is the canescent, appressed-stellate leaf tomentum beneath. This characteristic is shared only with *T. subtilis* Sprague & Sandw., which may be the closest relative of *T. incana*. *Tabebuia subtilis* differs chiefly in its much larger (10–17 mm by 9–12 mm), more finely tomentose calyx and elongate (3–10 mm long) inflorescence bracts. That species is a shrub or small tree of the Guayana uplands; *T. incana* is a large, 25–30 m tall canopy tree of Central Amazonia.

Manaosella cordifolia (DC.) A. Gentry, comb. nov.—FIG. 3.

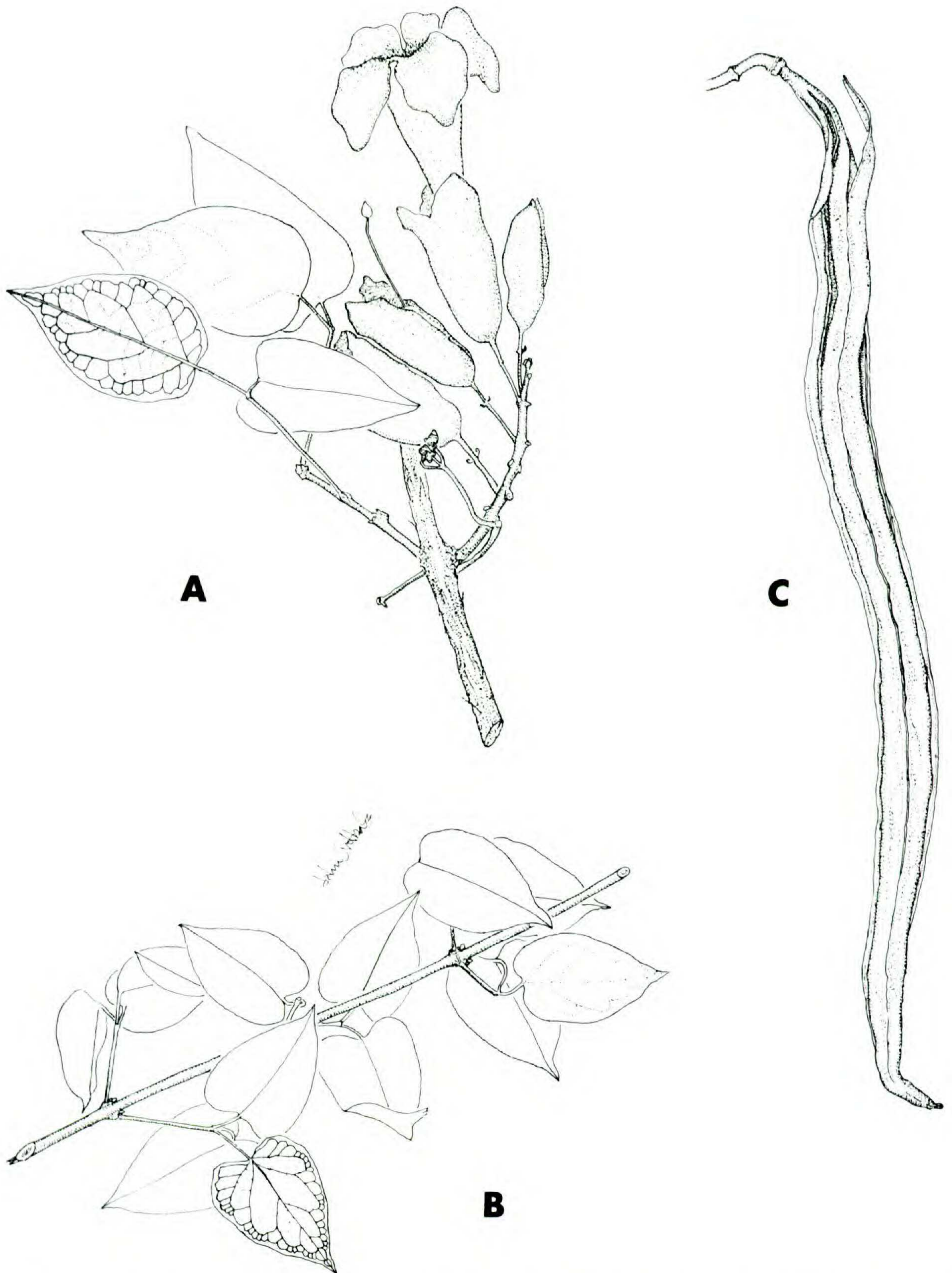


FIGURE 3. *Manosella cordifolia* (DC.) A. Gentry.—A. Habit ($\times\frac{3}{5}$). [After *Ducke s.n.*, RB-35644 (MO)].—B. Sterile branch ($\times\frac{3}{5}$). [After *Ducke s.n.*, RB-35644 (MO)].—C. Fruit ($\times\frac{3}{5}$). [After *Gentry 13319* (MO)].

Bignonia cordifolia DC., Prodr. 9: 162. 1845. TYPE: Brazil, Bahia, *Martius s.n.* (M).

Alsocydia cordata Mart. ex DC., Prodr. 9: 163. 1845, nom. nud., pro syn.

Bignonia platydactyla Barb. Rodr., *Vellozia*, ed. 2, 1: 51. 1891. TYPE: Brazil, Amazonas, *Barbosa Rodrigues s.n.* (not seen).

Manaosella platydactyla (Barb. Rodr.) J. C. Gom., Arch. Jard. Bot. Rio de Janeiro 9: 85. 1949.

The generic affinities of *Bignonia cordifolia*, known only from Martius's type collection from Bahia, Brazil, have been a mystery for well over a century. In 1891 Barbosa Rodrigues described from Manaus in Amazonian Brazil another species of Bigoniaceae with similar large inflated calyces and heart-shaped cordate leaves. Neither he nor any subsequent author ever noted the relationship of this Amazonian plant with *B. cordifolia*. *Bignonia platydactyla* is now assigned to the monotypic genus *Manaosella* and until recently has been supposed to be endemic to the region of Manaus. I have recently seen several collections of *Manaosella* which greatly extend both its distributional and morphological ranges. The new collections include: PARA: Belterra, *Black 46-1136* (IAN). Faz. Santa Olympia, Mun. Faro, *Black & Ledoux 50-10596* (IAN). Rio Tapajos, *Ducke s.n.* (RB-18415) (RB, MO). RONDONIA: Pôrto Velho, *Black s.n.* (IAN). MINAS GERAES: Manhumirim, *Hatschbach & Ahumada 31389* (MO). 31 km E of Poté, *Davidse et al. 11497* (MO).

Reexamination of the type photograph of *Bignonia cordifolia* from the perspective of these additional collections proves it quite indistinguishable from *Manaosella*. The older basionym of *B. cordifolia* must be retained in *Manaosella* and necessitates the new combination proposed here.